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New or Noteworthy North American Phanerogams—VII.

By N. L. Britton.

(Plate CLVIII.)

Jacksonia, Raf. Med. Rep. (II.) v. 352 (1808). Professor Greene has argued in Pittonia, ii. 174 and 274 that this name should replace *Polanisia*, Raf. Journ. Phys. lxxxix. 98 (1819), but I cannot see that his position is tenable. *Jacksonia* is published at the place above cited as follows:

Jacksonia (trifoliata)—*Cleome dodecandra*, L. Now *Cleome dodecandra*, L. Sp. Pl. 672 is a well-known Indian species. Rafinesque evidently followed Michaux in supposing that it was North American, and *Cleome dodecandra*, Michx. Fl. Bor. Amer. ii. 32 (1803) is indubitably the same as *Polanisia graveolens*, Raf. Amer. Journ. Sci. i. 379 (1819), and not at all the plant of Linnæus. In matters of nomenclature we must be exact, and so it seems to me that *Jacksonia*, Raf., can only apply to the Asiatic, Linnæan, *Cleome dodecandra*. I do not find any allusion to *Jacksonia* in subsequent writings of Rafinesque, and presume that he discovered his error.

Alsine, L. Sp. Pl. 272 (1753). I note that this generic name must, on the recognition of priority of place, and the beginning of nomenclature in 1753, clearly displace *Stellaria*, L. Sp. Pl. 421 (1753).

As given in the Species Plantarum, the Linnæan *Alsine* is composed of *A. media* (*Stellaria media*, Smith) and *A. segetalis*, now referred to *Tissa*.

Rubus setosus, Bigel. Fl. Bost. Ed. 2, 198 (1824). *R. hispidus*, var. *setosus*, T. & G. Fl. N. A. i. 456 (1840). *R. hispidus*, var. *suberectus*, Peck, Ann. Rep. State Bot. N. Y. for 1890, 31 (1891).

I have recently had my attention directed to this plant by the examination of some of Prof. Charles H. Peck's material from Northern New York. He, in collecting it, saw at once that it was different from any of the ordinary *Rubi*, and being unaware of Dr. Bigelow's previous description of it as a species, proposed it as a variety of *R. hispidus* as cited above, a position which had been earlier maintained by Torrey and Gray. The plant is strikingly different in appearance and habit from *R. hispidus*, being much stouter, larger leaved, suberect or ascending, the older wood most densely clothed with slender, stiff, slightly reflexed bristles, and I have no evidence that it is evergreen. Its range, as I now know it, is from Quebec to Southern New York and Pennsylvania, as the following citations of localities will indicate: Quebec (according to Bigelow); Thetford Center, Vt. (Jesup); Morehouseville, Caroga, Lake Pleasant and Brown Tract, Adirondack mountains, N. Y. (Peck); near Riverdale, New York City (Bicknell); Sudbury, Mass. (Bigelow); Cambridge, Mass. (Nuttall); Pocono Plateau, Penna. (Britton). The flowers as indicated by Dr. Bigelow's and Mr. Bicknell's specimens are small. The fruit is reddish-black and about 1 cm. high. The leaflets are mostly acute or short-acuminate, generally 5 on the leaves of the sterile shoots and 3 on the flowering branches, short-petiolulate or sessile.

Rubus villosus, Ait. var. *humifusus*, T. & G. Fl. N. A. i. 455 (1840). *R. Canadensis*, var. *invisus*, Bailey, Am. Gard. xii. 83 (1891).

Some two years since, when Prof. L. H. Bailey was engaged in studying the *Rubi* which have been brought into cultivation for their fruits, he asked my opinion of the plant here alluded to, based on the specimens which had served as the type of the description, and other material which he at that time submitted. I examined the specimens and reached the conclusion, in which he subsequently concurred after seeing them, that it was all referable to *R. Canadensis*, L. I had not then seen the plant growing. Since then I have observed it growing in several places, and numer-

ous field observations together with the accumulation of many herbarium specimens have convinced me that it is distinct from either *R. villosus* or *R. Canadensis*, as indicated by Prof. Bailey from Prof. Dudley's observations (Am. Gard. loc. cit). The plant is exceedingly abundant on dry wooded hills in Southwestern Virginia, where it was pointed out to me by Miss Vail and Mr. Small, who had noted its characters, and where *R. Canadensis* was not observed at all. It is also very plentiful on the Highlands of Navesink, N. J., in the woods; occurs in Pennsylvania and Central New York, and some of the type material was gathered by Dr. Torrey at West Point, N. Y.

Its range is doubtless much wider, however, than above indicated. It is a procumbent or ascending species, pubescent or nearly glabrous, the stem slender, sparingly prickly, the upper leaves almost invariably unifoliolate, and the racemes but 1-few-flowered. The leaflets are broadly ovate or oval, acute or more commonly obtuse, thin, the terminal ones usually cordate, or all of them rounded or obtuse at the base; the fruit is small in all the specimens seen by me. The plant appears to be always a dry woods species.

The specific name *humifusus* has already twice been used in the genus. I therefore propose that this plant be known as R. INVISUS (Bailey). Two possible older names by Tratteninck are doubtfully cited by Torrey and Gray as synonyms of their var. *humifusus*, but I cannot satisfy myself that either of them applies to the plant.

R. Canadensis and its several varieties are, in so far as I have observed them, always strictly trailing, glabrous or nearly so, occur in open, sunny, sandy or rocky soil, have larger acute or acutish leaflets, the uppermost sometimes unifoliolate, but commonly 3-foliolate, the racemes several-flowered, borne at the ends of erect or ascending branches, the fruit large, sweet and succulent, and with that of *R. cuneifolius* our best blackberries.

Valeriana pauciflora, Michx. Mr. R. H. Ingraham, of Niles, Ohio, after reading my note on this species (BULLETIN, xix. 223), obligingly sent me perfectly ripe fruits from a specimen collected by him near Indianapolis, Ind., which have the pappus elongated and plumose as in the other species of the genus, thus showing

that my surmise that they do not elongate was erroneous. These fruits are narrower and much more lanceolate in outline than those of Professor Porter's specimen from Millersville, Pa., and many of them are slender-pedicelled.

GNAPHALIUM HELLERI, n. sp. *G. polycephalum*, var. β., T. and G. Fl. N. A. ii.

Similar to *G. obtusifolium*, L. and *G. decurrens*, Ives, corymbosely or somewhat paniculately branched above, 1½°–2° high, the stem and branches densely glandular-pubescent, not tomentose. Leaves oblong-lanceolate, sessile, acuminate at both ends, green and hispidulous above, white-tomentose beneath, the larger about 5 cm. long and 1 cm. wide, the uppermost much smaller and narrower; heads very numerous, corymbose or corymbose-paniculate, sessile or nearly so in the clusters, about 2½″ broad; involucre oblong or becoming campanulate, 6 mm. high, its bracts bright white, tomentose, the outer oblong, the inner linear-oblong, all obtuse; pappus bristles distinct to the base, separately deciduous; achenes glabrous.

In fields, Southeastern Virginia (Heller) to Georgia (Boykin).

The Genus Coreopsis, L. The close affinity of *Coreopsis* to *Bidens* has repeatedly been commented upon by modern authors, and it has been more than once maintained that the two should be regarded as congeneric. The principal diagnostic character which has been taken as separating them is the downwardly barbed pappus-awns of *Bidens*, the species with awned pappus which have been admitted into *Coreopsis*, having the awns upwardly barbed. This character has been found to completely fail in the case of *Bidens frondosa*, L., which, as it occurs along the Lower Delaware River in Pennsylvania, New Jersey and Delaware, has the awns either upwardly or downwardly barbed, and I have observed downwardly barbed awns in *Coreopsis discoidea*.

It is also stated by Dr. Gray that some of the species included by him in the Synoptical Flora in *Coreopsis* hybridize with *Bidens frondosa*.

For all this, it is my opinion that the genus *Coreopsis* should be maintained for the original types *C. verticillata, C. tripteris, C. auriculata, C. lanceolata* and their allies, which have a pappus of two short usually unbarbed teeth, a coroniform border or 0, and that those which have a pappus of awns upwardly or downwardly barbed should be referred to *Bidens*. The last six species of

Coreopsis in Dr. Gray's arrangement in the Synoptical Flora would thus go to *Bidens*, with species of which they have everything else in common. Their names would then be as follows:

BIDENS CORONATA (L.) Fisch. fide Steudel. *Coreopsis coronata*, L. Sp. Pl. Ed. 2, 1281 (1763). *Coreopsis aurea*, Ait. Hort. Kew. iii. 252 (1789).

BIDENS TRICHOSPERMA (Michx.). *Coreopsis trichosperma*, Michx. Fl. Bor. Amer. ii. 139 (1803).

VAR. TENUILOBA (A. Gray). *C. trichosperma*, var. *tenuiloba*, A. Gray, Syn. Fl. i. Part 2, 295 (1884).

It appears to me as though further observation would demonstrate specific characters for this plant.

BIDENS ARISTOSA (Michx.). *Coreopsis aristosa*, Michx. Fl. Bor. Amer. ii. 140 (1803). *Coreopsis aristata*, Willd. Sp. Pl. iii. 2253 (1804).

BIDENS INVOLUCRATA (Nutt.). *Coreopsis involucrata*, Nutt. Journ. Phil. Acad. vii. 74 (1834).

BIDENS BIDENTOIDES (Nutt.). *Diodonta bidentoides*, Nutt. Trans. Amer. Phil. Soc. (II.) vii. 361 (1841). *Coreopsis bidentoides*, T. and G. Fl. N. A. ii. 339 (1842).

BIDENS DISCOIDEA (T. and G.). *Coreopsis discoidea*, T. and G. Fl. N. A. ii. 339 (1842).

Pseva, Raf. In his review of the botanical writings of Pursh, Elliott, Nuttall and others, published in the Journal de Physique, lxxxix. 256–262 (1819), Rafinesque states that *Chimaphila*, Pursh, (1814) is antedated by *Pseva*, Raf. Med. Rep. 1809. This is alluded to by Pfeiffer in the "Nomenclator," and the name has been taken up and *Chimaphila* displaced by Dr. Kuntze (Rev. Gen. Pl., 390), although neither of these authors appear to have seen Rafinesque's papers in the Medical Repository. There were several of these, published from 1805 to 1810. I wish to record here that I have recently gone over these papers line by line and can find no allusion to *Pseva* in any of them, nor have I met with the name in any of Rafinesque's writings except at the place where he claims it as noted above. It would thus appear to date from 1819 only, and not to interfere with *Chimaphila*. Rafinesque evidently derived it from the aboriginal name Pipsissewa, as in the case of *Hicoria*.

Pyrola oxypetala, C. F. Austin, in A. Gray, Man. Ed. 5, 302 (1867). [Plate CLVIII.]

The specimens on which this species is based were collected on hills at Deposit, Delaware county, N. Y., by Mr. Austin in 1860, and so far as I am informed, nothing like them has ever been found anywhere else. From Mr. Austin's original label and manuscript description preserved with a type specimen in the Herbarium of Columbia College, it would appear that he obtained very little of it, as he says it was "very rare." The plant is distinguished from all its congeners by its acuminate petals and spreading or ascending flowers. Dr. Torrey has annotated the herbarium sheet "abnormal form of *P. chlorantha*?" and Dr. Gray in his Synoptical Flora remarks "anomalous, perhaps monstrous." Whatever its relation to other species may be, the characters of the original specimen are distinct enough, and in order to direct attention anew to this interesting form I have thought it worth while to present an illustration in the hope that some one may encounter it again.

Anagallis cærulea, Schreb. This is maintained as a species distinct from the common *A. arvensis*, L, by Koch, the authors of the last edition of the London Catalogue of British Plants and other European botanists. Its character is not alone its blue corolla, but that the corolla-segments are glabrous, those of *A. arvensis* being glandular-ciliate. Babington, who refers it to a variety of *A. arvensis* as does Ledebour, suggests that it is probably distinct. It would be well if those who have the opportunity would carefully examine these plants in the field and record their observations. Both the red and blue-flowered plants apparently occur in North America.

Paronychia pusilla, Greene, Pittonia, i. 302, Fl. Fran. 131, from "an isolated outcropping of rock in the mouth of a cañon opening to the plains at the eastern base of Mt. Diablo, near Bethany, Cal.," is *Herniaria cinerea*, D. C., a plant of Southern Europe.

Notes From the Minnesota State Herbaria.

I. SOME EXTENSIONS OF PLANT RANGES.

By Edmund P. Sheldon.

(Plate CLIX.)

Potamogeton Vaseyi, Robbins, in A. Gray, Man. Ed. 5, 485 (1867).

Not previously reported from Minnesota. Specimens of the fruiting form with floating leaves were found in Chisago lake, Chisago county, Minn. (B. C. Taylor, July, 1892).

Potamogeton Illinoensis, Morong, Bot. Gaz. v. 50 (1880).

Hitherto Minnesota collections of this species have been made only on the southern border of the State. It has been found at Lake Minnewaska, Pope county, Minn. (B. C. Taylor, Aug., 1891), and at Green lake, Chisago county, Minn. (B. C. Taylor, Aug., 1892).

Sagittaria cuneata, n. sp. Aquatic, rooting in the sand; leaves long-petioled, sagittate or rarely oblong-lanceolate; blade floating, small, 2–3 inches in length, with linear lobes; phyllodia submerged, of two forms, either linear-attenuate and reaching nearly to the surface of the water, or lanceolate and clustered at the base; scape slender, terete, 2–3 feet in length, bearing whorls of flowers at the surface of the water; pedicels divergent, extended, ternate, with often a fourth in the upper whorls; bracts connate, lanceolate-ovate, acute; filaments glandular-thickened, not pubescent, shorter than the ovate anthers; achenia cuneate, short, one-half line in length, with minute retrorse beak above, outer and inner margins with single, tumid crests. [Plate CLIX.]

Abundant in shallow water of East Battle Lake, Otter Tail county, Minn., from which locality the type specimen is described. Found also in Mollie Stark and Blanche Lakes of the same county (E. P. S., Aug., 1892).

Poa debilis, Torr. Fl. N. Y. ii. 459 (1843).

Not previously reported from Minnesota. Abundant in open, sandy soil near Mora, Kanabec county, Minn. (E. P. S., July, 1892).

Eriophorum Virginicum, Linn. Spec. i. 52 (1753).

Not previously reported from Minnesota. Swamps and peat-bogs near Little Lake, Chisago county, Minn. (B. C. Taylor, Aug., 1892).

Scirpus maritimus, Linn. Spec. i. 50 (1753).

Not previously reported from Minnesota. It was found growing in saline marshes and around edges of swamps near Willmar, Kandiyohi county, Minn. (W. D. Frost, July, 1892).

Carex Norvegica, Willd. Spec. iv. 227 (1804).

Not previously reported from Minnesota. Collected in marshy ground near Irving Chase Lake, Cass county, Minn. (Mac M. and Sheld., Aug., 1890). In specimens from this collection the terminal spike is distinctly long-contracted below with the staminate flowers. It is remarkable that this plant, which has hitherto been reported for North America as occurring only in Maine and northward, should be found in the heart of the Minnesota forest.

Carex stricta, Lam. var. *decora*, Bailey, Bot. Gaz. xiii. 85 (1888).

Not previously reported from Minnesota. Common in sandy soil near Brainerd, Crow Wing county, Minn., and near Nichols, Aitkin county, Minn. (E. P. S., June, 1892). This variety seems to prefer upland, sandy places. It is frequently seen on the pine-barrens near the two above localities.

Carex exilis, Dewey, Am. Journ. Sci. Ser. I. xiv. 35 (1828).

Not previously reported from Minnesota. Collected in a tamarack swamp near Twin Lake, Hennepin county, Minn. (E. P. S., Sept., 1890), and in low, swampy ground west of Brainerd, Crow Wing county, Minn. (E. P. S., June. 1892).

Carex flava, Linn. Spec. i. 975 (1753).

Not previously reported from Minnesota. Typical specimens of this species were found in abundance on the shores of many of the lakes of Otter Tail county, Minn. (E. P. S., Aug., 1892).

CAREX ALBURSINA, n. sp.

C. laxiflora, Lam. var. *latifolia*, Boott. Ill. 38 (1858). Not *C. latifolia*, Schkr. Car. i. 104 (1801), which is a later name for *C. plantaginea*, Lam. Ency. Meth. iii. 392 (1789).

Not previously reported from Minnesota. This plant prefers moist edges of deep woods. It is abundant near Wilton, Waseca county, Minn. (E. P. S., June, 1891), and in the neighborhood of Mahtomedi, on the shore of White Bear Lake, Washington county, Minn. (E. P. S., July, 1892).

The tall aspect of the plant, with its broad leaves mostly clustered at the base, together with the broad bracts and sessile staminate spikes, seem to mark this as a distinct species.

ERYSIMUM SYRTICOLUM, n. sp.

Glaucous throughout, with close, appressed hairs; stems upright, rigid, branching from the base, 1–2½ feet high; leaves rigid, sparse, linear-lanceolate, sparingly denticulate, 1–2 inches in length, early deciduous; flowers small, 3–4 lines in length; stigma conspicuously two-lobed; pods narrow, short, 6–15 lines in length, mostly tumid at the base, erect or slightly spreading on short, diverging pedicels, which are 2½–3 lines in length.

The locality of the type is on the high, sandy banks of Lake Benton, Lincoln county, Minn., where I collected it in August, 1891. During August, 1892, I found it sparingly on the gravelly shores of Pelican Lake, Otter Tail county, Minn. This species resembles *E. inconspicuum* (S. Wats.) MacM., but the glaucous, strict aspect and short pods fully characterize it.

Nasturtium obtusum, Nutt. in T. and G. Fl. i. 74 (1838).

Not previously reported from Minnesota. Frequent in low, marshy ground near Fergus Falls, Otter Tail county, Minn. (E. P. S., Aug., 1892).

Cratægus punctata, Jacq. Hort. Vindob. i. 10 (1770).

Not previously reported from Minnesota, although occurring frequently in Illinois, some portions of Wisconsin, and Eastern Missouri. A number of scattered bushes were found growing on open hillsides near Center City, Chisago county, Minn. (B. C. Taylor, June, 1892).

Astralagus multiflorus (Pursh) A. Gray, Proc. Am. Acad. vi. 226 1866).

Not previously reported from Minnesota. This plant was found in abundance on the sandy shores of Lakes Belmont and Eagle, Otter Tail county, Minn. (E. P. S., Aug., 1892). It has a bushy, bunched habit of growth. The bunches are frequently 2–3 feet in diameter. This adds another to the list of eastward traveling, Rocky Mountain plants growing in Minnesota.

Elatine Americana (Pursh) Arn. Edin. Journ. Nat. and Geogr. Sci. i. 430 (1830).

Not previously reported from Minnesota. This plant was

found in abundance, growing in 2–6 inches of water at Linn Lake, Chisago county, Minn. (B. C. Taylor, Aug., 1892).

Bartonia Virginica (Linn.) B. S. P. Prel. Cat. N. Y. (1888).

Not previously reported from Minnesota. Found growing among moss in a peat-bog near Zumbrota, Goodhue county, Minn. (C. A. Ballard, Aug., 1892).

Collomia linearis, Nutt. Gen. i. 126 (1818).

Abundant on the shores of Mille Lacs Lake, Aitkin and Mille Lacs counties, Minn. (E. P. S., Aug., 1892). Plants collected by Dr. J. H. Sandberg, near Red Wing, Goodhue county, Minn. (Aug., 1885) and referred by him to this species are a large-leaved, bushy form. These two Eastern Minnesota collections represent, so far as is known, the only Minnesota localities of this western and northern species.

Solidago ulmifolia, Muhl. in Willd. Sp. Pl. iii. 2060 (1804).

Heretofore the only Minnesota collections of this plant have been made along the southeastern border of the State. It is abundant by roadsides and borders of woods near Lakes Lida and Pelican, Otter Tail county, Minn. (E. P. S., Aug., 1892).

Aster lateriflorus (Linn.) Britt. var. THYRSOIDEUS (A. Gray). *A. diffusus*, Ait., var. *thyrsoideus*, A. Gray, Syn. Fl. i. II. 187 (1888).

Not previously reported from Minnesota. This plant prefers sandy edges of woods. It is abundant near Lakes Belmont and Eagle, in the Leaf Hill district of Otter Tail county, Minn. (E. P. S., Aug., 1892).

ASTER INCANOPILOSUS (Lindl.).

A. ramulosus, Lindl. var. *incanopilosus*, Lindl. in DC. Prodr. v. 243 (1836).

A. multiflorus, Ait. var. *commutatus*, T. and G. Fl. ii. 124 (1841).

A. commutatus, A. Gray, Syn. Fl. i. ii. 185 (1888).

Not previously reported from Minnesota. This large-capitate species of the section Squarrosa is common on the dry prairie hills of Otter Tail county, Minn. (E. P. S., Aug., 1892).

Xanthium Canadense, Mill. var. *echinatum* (Murr.) A. Gray, Syn. Fl. i. II. 252 (1888).

This plant is common on the sandy shores of the lakes of Minnesota. Typical specimens of *X. Canadense*, Mill., prefer roadsides, fields and other open places.

Artemisia serrata, Nutt. Gen. ii. 142 (1818).

Reported as occurring from Illinois to Dakota, but probably never before collected in Minnesota. It was found in low swampy ground near Taylor's Falls, Chisago county, Minn. (B. C. Taylor, Aug., 1892).

Echinops sphærocephalus, Linn. Spec. i. 814 (1753).

This European composite has been introduced in the neighborhood of St. Anthony Park, Ramsey county, Minn. (Dr. Otto Lugger, Sept., 1891, and Oct., 1892). It is becoming thoroughly established. To my knowledge this is the first recorded occurrence of the plant in North America.

The Systematic Position of Hartwrightia Floridana.

By John M. Holzinger.

(Plate CLX.)

Dr. Gray established this monotypical genus of the order Compositæ on plants communicated by Dr. S. Hart Wright, who collected them in sphagnous swamps in Volusia county, Florida, in November, 1886. Since that time the plant seems not to have been collected again, except by Mr. Otto Vesterlund, who in November, 1889, found it near Pittman, Lake county, just west of the locality at which Dr. Wright discovered it. Is it possible that this is the full range of this plant? It seems that after the lapse of six years it ought to have turned up at more stations. It is more likely that the plant has been found, but could not be identified, and that this is the real reason for the meagre data concerning its distribution.

The genus *Hartwrightia* is first described in Proc. Am. Acad. xxiii. 264 (May 29, 1888). It is there referred to the Piquerieæ, with *Gymnocoronis* and *Adenostemma* as the nearest related genera, being supposed to be the only member of this subtribe within our limits. But the plant has evidently appendiculate anthers, and so should stand in the next subtribe, the Agerateæ. The nearest allied genus is *Allomia*, with which it has in common two characters, namely, absence of pappus, and the number of involucral

bracts small. The latter in both genera are in two series, provided we count as a second series the 2 or 3 quite short outer bracts at the base of the anthodia of *Hartwrightia*. The genus therefore should be inserted after *Allomia*, in Durand's Index, under number 2441 b. This disposition is concurred in by the late Dr. Sereno Watson, whose kindly counsel in this and other matters is gratefully acknowledged.

Explanation of Plate CLX.

Hartwrightia Floridana, A. Gray.

a. An anthodium.
b. A floret.
c. A corolla, laid open, viewed from within.
d. An anther, showing the appendage at the apex.
e. An achenium.
f. The style and stigmas, viewed from two directions.
g. Cross-section of an achenium.

The Winter Buds of Utricularia.

By John M. Holzinger.

(Plate CLXI.)

In the summer of 1891 Dr. J. H. Sandberg, collecting in Northern Minnesota, sent to the United States Department of Agriculture a *Utricularia* (No. 516) which seems to be *Utricularia intermedia*, Hayne, though the details of leaves do not agree with Reichenbach's figures of this species. The specimens all have the good hibernacula or winter buds, to which reference is made in Gray's Synoptical Flora, Vol. ii., Part I, p. 315, as "hybernacular tuber-like buds." In these specimens they are about 6 mm. in diameter, and of the shape of a small bird's egg. They consist of numerous broadly palmate scales (Fig. c), crowded along the short axis, and standing out at right angles from it. These scales are beset along the margin with tufts of bristles, which, falling on the outside of the bud, give it the appearance of a small hairy cocoon. Its structure thus hardly warrants the use of the term "tuber-like."

The only specimen in the National Herbarium, among the all species of this genus that has a single winter bud represented, is one of *U. intermedia* collected by Engelmann in Germany in 1829; showing how little attention collectors have paid to this interesting organ on the submerged stems of *Utricularia*. Young leaves —for this is what these bristle-margined bodies from the buds seem to be—from Engelmann's specimen agree exactly with those from the Minnesota plants. At first orbicular, passing nearly around the axis, and having only a few primary incisions, they soon begin to branch out dichotomously, the bunches of bristles marking the apices of the leaf-divisions. This is shown in Engelmann's specimen, in which the bud begins to develop ordinary leaves at one end. The tufts of bristles thus at last become scattered, and persist as sharp teeth along the edges of the narrow leaf-divisions.

Reichenbach, in Icones Fl. Germ., figures two hibernacula of *Utricularia vulgaris*, representing them as of about twice the diameter as those of *U. intermedia*. Under *U. major* he states that he collected the hibernacula of this species abundantly near Leipzig, but found them never glutinous as in *U. vulgaris*. No figure of these buds is given. But for *U. minor* there is figured a leaf with a bud ("gemma"), which may be partly developed hibernaculum. The bud opens circinately, as do the growing ends of the ordinary leaf-bearing branches in the Minnesota plants (see Fig. a). And in case of the hibernacula this mode of unfolding appears improbable till established by observation. Reichenbach describes and figures two more species, *U. intermedia* and *U. Bremii*, but in neither case gives a reference or a figure of hibernacula.

Some discrepancies should be mentioned between the leaves and bladder-appendages of *U. intermedia*, as figured in Reichenbach, and as actually appearing in the specimens. In the figure the leaf divisions are represented as tapering uniformly like spines, and show no mid-vein; in the Minnesota specimens the leaf divisions are more ribbon-like, narrowing to a point only near the apex, and there is a distinct vein running to the apex of each division (Fig. b). The bladder in Reichenbach's figure has strong few-toothed appendages about one-third the length of the bladder; in the plant under consideration these appendages are as long or longer

than the bladder, and are very slender branching filaments (Figs. e, f), somewhat like those figured in Reichenbach for *U. minor*, but with branches more slender and more numerous. The figure and the specimens agree in that the base of the flowering stem sends out two kinds of simple or nearly simple branches, one bearing only leaves, the other, more slender, bearing the bladders. In the fresh specimens these latter branches are seen to be furnished with leaves also, but these are smaller and more distinct than on the other branches. And the bladders, in fact, develop on these more scattered leaves, some of the leaf divisions always remaining distinct. This also is not well shown in Reichenbach's figure.

The hibernacular buds, finally, in this species may occur either on the leafy branches or on those with bladders. There is generally one, rarely more than two, on a plant, so far as appears from the specimens in hand. And they are always on a naked stalk or branch one to two inches long.

In the close observation of the presence, structure and development of the hibernacula in the different North American species of *Utricularia*, there is open an inviting field to some enterprising field botanists favorably located for such a task.

Explanation of Plate CXLI.

Utricularia intermedia.

a. A plant, reduced ½.
b. Leaf, enlarged.
c. Scale from bud, enlarged.
d, e. Bladder-bearing leaves, enlarged.

Notes on Nasturtium Armoracia.

By Charles A. Davis.

Three years ago the attention of the writer was incidentally attracted to this plant, and a series of observations was made on the occurrence on it of pinnatifid leaves, the results of which were published in the Bulletin.

Since that time the plant has been the source of much interest, from various structural peculiarities, of which no previous study

has apparently been published. The description of the species, as given in the revised edition of Gray's Manual, is as follows: "Root-leaves very large, oblong, crenate, rarely pinnatifid, those of the stem lanceolate; fruiting pedicels ascending; pods globular (seldom formed); style very short. Roots large and long."

It has been pointed out already that the pinnatifid leaves are not "rarely" but normally present in the spring and fall. In addition, the quoted description should be amended by mention of the fact that the lower stem leaves are invariably pinnately dissected, and gradually pass through pinnatifid and notched forms until near the top they are simply lanceolate with crenate and toothed margins. Of hundreds of flowering stems examined, all had this peculiar arrangement of stem leaves, and extended observation has tended to confirm the opinion that the plant was originally semi-aquatic, which, at the time of flowering, was accustomed to stand knee-deep, as it were, in water. As a further proof of the value of structural peculiarities as indices of the former habits of plants, it may be well to note that very vigorous flowering plants of the species under consideration have been observed growing in ditches and on the margins of ponds, which, though full in the spring and fall, are dry or nearly so in the summer. These plants, at the time the notes were made, stood in water which was of such depth that the dissected leaves were nearly all covered.

By far the most interesting characters of this plant, however, are its provisions for propagation and the preservation of the species. As noted in the description quoted from the Manual, the pods are seldom formed. When formed they are without seeds and soon disappear, apparently falling off, leaving the pedicels fast to the axis of inflorescence. The cause of this failure to mature seed does not appear. The flowers are freely visited by insects, pollen is present in the anthers and seems abundant, and the ovary and ovules are apparently entirely normal. A possible cause of the lack of seeds suggested itself when the stigma was studied. This organ is covered with numerous comparatively long hairs, which may prevent the pollen from reaching the stigmatic surface, or it may be that the pollen, in order to fertilize the ovules, has to fall directly on the tips of these hairs. In either case it would seem highly probable that now and

then seeds would mature, but a careful examination of a large amount of material failed to show such mature seeds. It is also possible that the peculiar structure of the stigma makes it impossible for the common insects which visit the plant to produce pollination, and that the peculiar insect developed along with the plant was left behind when it was brought from Europe. To one familiar with the peculiar readiness with which the plant propagates from the root, or even the smallest fraction of it, the absence of seeds capable of germination is not a great surprise, for the plant is well protected against extermination in this way.

The root, so called, has many of the characteristics of a rhizoma and develops buds and leaves from any part that is exposed to the light, or whenever the plant needs an increase of leaf surface. If all parts of the plant except the tips of the roots are destroyed each one of these tips may become one or more plants. If the root be placed on top of the ground it soon becomes green on the upper side at least, and clusters of leaves and rootlets appear. Oftentimes horizontal branches at some distance below the surface will send up vertical branches having small scales at regular intervals in place of leaves, thus forming a vertical rootstock. In one of a series of experiments undertaken to test the possibilities of the plant in this direction, thirteen pieces of the smaller parts of a root were taken, varying from five to nine mm. in diameter and cut into irregular lengths, varying from six mm. to three cm. These were placed in a tightly covered fruit jar, containing a little moisture and left exposed to the light for two weeks or a little longer. At the end of that time twelve of the pieces had green sprouts from one mm. to seven cm. long, measuring the longest leaf, besides numerous rootlets, growing from the points where the buds started out. One piece twenty-five mm. long had eleven well defined buds and sprouts on it, but no rootlets. To one piece a small fibrous branch was attached, and it also bore a vigorous sprout. At the present writing, more than two months after the fragments of root were placed in the jar, the plants which sprung from them are still alive, although the parent roots have rotted. Each of the plantlets has a short thick base, almost like a bulb, which is green in color and shows the scars of leaves which have fallen. In structure and position this part of the plantlet is identi-

cal with the tap-root of the plant, as it grows under normal conditions. The readiness of the root to send out buds and grow, is not of much use to the plant in bringing about a rapid and wide distribution of the species, in the undisturbed condition, for the roots do not spread widely, growing as a rule vertically downward, so that a plant and its descendants would be years in spreading a few feet in a lateral direction.

Having no seeds the plant would be handicapped unless some other way of propagation than root-division were developed. The emergency has been met in a manner that is as interesting as rare. Soon after the plant has ceased flowering, and the form of ripening seeds is gone through with, supernumerary buds appear in the axils of the leaves on the upper part of the stem and of those subtending the branches of the inflorescence. These buds grow into very short, acaulescent in fact, branches as the season progresses, and give the old flowering stems the appearance of being diseased. A careful examination of these short branches shows them to be made up of clusters of little leaves, closely resembling seedlings. Each of the older leaves in the cluster has the base of its petiole thickened, and taken together the reserve food supply of one of the branches is considerable. When broken from the parent stem and placed in water these branchlets at once send out roots and are ready to take their chances in life with much greater likelihood of success than the ordinary seedling. A single flowering stem will often develop more than a hundred of these plantlets, all of which are capable of taking root if opportunity offers. Just when or how the plantlets separate from the stem has not been determined, but most likely they fall with the old flowering stem to the ground or into the water, and being set free by the breaking up of the stem, are driven ashore by the wind, where they readily take root. The fact that this provision of the plant for maintaining itself has been developed, leads to some interesting speculations as to the origin of the habit, whether not maturing seeds was the cause or the effect of the other habit, but like many other questions it would seem as if this one would have to go unanswered until our knowledge increases.

Notes on the Flora of Southern New Jersey.

The following notes, unless otherwise stated, refer to the plants of Atlantic county, N. J., and as these plants have been collected since 1889, for the most part, the notes are to be considered as supplementary to the notes in Prof. N. L. Britton's Catalogue of Plants Found in New Jersey.

Delphinum Consolida, L. White flowers common at May's Landing.

Polygala polygama, Walt. Collected with F. E. Lloyd near Egg Harbor City. The only place I have found it in Atlantic county.

Silene inflata, Smith. May's Landing.

Silene noctiflora, L. May's Landing and Elwood.

Rhus typhina, L. Weymouth and May's Landing, and also along the road between these places.

Lespedeza angustifolia (Pursh) Ell. Atsion and Indian Mills, Burlington county, and abundant in Atlantic county.

Phaseolus polystachyus (L.) B. S. P. Avon-by-the-Sea, Monmouth county.

Galium verum, L. May's Landing, one place only.

Aster gracilis, Nutt. Pancoast Mills.

Aster Novæ-Angliæ, L. Rare. Elwood and Pleasantville only.

Hypochæris radicata, L. Has become naturalized at Pleasantville. Also found at Avon-by-the-Sea, Monmouth county.

Trientalis Americana (Pers.) Pursh. May's Landing. Not common in Atlantic county.

Erythræa ramosissima, Pers. Brigantine Beach. Quite abundant. August, 1891.

Myosotis laxa, Lehm. Not common. One place May's Landing and one place Pleasantville.

Lycopus sessilifolius, A. Gray. Near Great Egg Harbor River, below May's Landing. A locality further south and on a different river from the other reported localities.

Pycnanthemum muticum (Michx.) Pers. Pleasantville.

Pycnanthemum Virginicum (L.) B. S. P. Elwood only.

Calamintha; an introduced species. Elwood. One place in a field. May 30, 1892.

Plantago Patagonica, Jacq., var. *aristata* (Michx.) A. Gray. Found everywhere and is increasing rapidly.

Lindera Benzoin (L.) Meisn. Pleasantville and Elwood. I have carefully looked for it in the early spring, and I am sure that it is not common in Atlantic county.

Quercus. Near May's Landing. Collected with J. C. Gifford. It is apparently *Q. Phellos*, L., × *Q. ilicifolia*, Wang.

Aplectrum spicatum (Walt.) B. S. P. Princeton, Mercer county.

Speiranthes simplex, A. Gray. Elwood.

Arethusa bulbosa, L. Near Princeton Junction, Mercer county.

Smilax laurifolia, L. May's Landing and Pleasantville.

Helonias bullata, L. Pleasantville. Not "frequent" in Atlantic county, so far as my experience goes.

Pontederia cordata, L., var. *angustifolia*, Pursh. In Great Egg Harbor River, above May's Landing.

Arisæma triphyllum (L.) Torr. Pleasantville, abundant in one locality.

Selaginella apus (L.) Spring. Common at Pleasantville and at May's Landing.

Botrychium ternatum (Thunb.), Sw., var. *obliquum* (Muhl.) Milde. and var. *dissectum* (Spreng.) Milde., were found growing together in one locality at Pleasantville. So far as my experience goes no *Botrychium* can be said to be "frequent" in Atlantic county.

Aspidium Noveboracense (L.) Sw. May's Landing.

Aspidium spinulosum, Sw., var. *intermedium* (Willd.) D. C. Eaton. In cedar-swamp, Pleasantville, abundant in one place and evergreen.

JOHN E. PETERS.

PLEASANTVILLE, N. J.

Notes on some Fungi collected in Jamaica.

BY T. D. A. COCKERELL.

Although the ferns and mosses of this island have received a considerable share of attention, the fungi, so far as I can learn from available literature, have been almost entirely neglected. Mr. J. B. Ellis, of Newfield, has lately been most kind in identifying Jamaican fungi for me, and the results already attained show that

there is plenty to be found that is new or interesting. Some new species await description—four have already been described in the *Journal of the Institute of Jamaica*, 1892–93, but the following notes on species already known (with one exception) may serve as a slight contribution to the flora:

1. *Æcidium Euphorbiæ*, Pers. East street, Kingston.
2. *Agaricus campestris*, L. Dr. Plaxton informs me that during September, 1891, mushrooms of the ordinary species were gathered in abundance in the grounds of the Lunatic Asylum, Kingston.
3. *Antennaria Robbinsii*, B. & M. Dr. Strachan gave me a twig infested with this.
4. *Arcyria incarnata* (Pers.) Balaclava, parish of St. Elizabeth.
5. *Aschersonia turbinata*, Berk. On leaves of Tangerine orange at Mandeville (1,950 ft. alt).
6. *Cyathus striatus* (Huds.) Mandeville.
7. *Didymium clavus*, A. & S. Balaclava.
8. *Hypoxylon Broomeianum*, B. & C. On a log, Balaclava.
9. *Hypoxylon Howeianum*, Pk. On a fence, Mandeville.
10. *Lenzites striata*, Sw. On a railway tie, Balaclava. Also found in Kingston.
11. *Megalonectria pseudotrichia* (Schw.) Mandeville.
12. *Monilia candida*, Bon., form. On decaying *Zea Mays* (from Pedro) in Kingston.
13. *Pellicularia Koleroga*, Cooke. On leaves of coffee, near Mandeville.
14. *Perichæna depressa*, Lib. Kingston.
15. *Peziza Dochmia*, B. & C. Found at Cherry Garden by Mr. Marescaux. Mr. Ellis tells me it was originally found in Cuba.
16. *Phoma leguminum*, West. East street, Kingston.
17. *Polystictus versicolor*, Fr. Moneague. A variety of the same on a stump at Mandeville.
18. *Rhizomorpha subcorticale*, Pers. Balaclava.
19. *Schizophyllum commune*, Fr. Kingston, Moneague and Balaclava.
20. *Sphærotheca pannosa* (Wallr.) Lev. On rose, Kingston (Dr. Lockett). Identified by Mr. B. T. Galloway.

21. *Stilbum flavidum*, Cooke. On coffee leaves received from Mr. G. Massy, of Richmond Vale, Trinity Ville.
22. *Uredo Vialæ*, Lag. On grape vine, Kingston and environs, abundant.
23. *Uromyces Euphorbiæ*, C. & P. East street, Kingston, growing with the *Æcidium* (No. 1).
24. *Ustilago affinis*, Ell. & Ev. On *Stenotaphrum Americanum* Schr. (identified by Dr. Vasey) at Mandeville. This is a new species, of which Mr. Ellis writes: "Very near *U. virens*, Cke., but spores rather larger and lighter colored, and not granular roughened." (In litt., Nov. 10, 1892.)

INSTITUTE OF JAMAICA,
KINGSTON, JAMAICA, January 13, 1893.

Botanical Notes.

Fungi Columbiani.—Owing to our inability to supply any more sets of the NORTH AMERICAN FUNGI, we have concluded to issue a second edition of this collection, under the name of FUNGI COLUMBIANI, in order to distinguish it from N. A. F., 1st edition, series 2d.

The specimens in this 2d edition will not be in bound books, but will be distributed loose, and will be supplied at $6.00 per 100 or Century. We shall issue only 60 copies. This 2d edition will not interfere with the 1st edition (Cents. I.–XXIX.), which will be continued as material comes to hand. Species not in edition 1st will not be issued in edition 2d, unless there is enough for both, so as not to do injustice to the subscribers to edition 1st by obliging them to buy edition 2d also.

The numbers of any given species in the 2d edition will not necessarily be the same as those of these same species in 1st edition. We expect to have Century 1st ready by the end of this year. The species will have printed labels, as in edition 1st.

J. B. ELLIS,
B. M. EVERHART.

NEWFIELD, N. J.

Funghi Parassiti delle Piante Coltivate.—G. Briosi and F. Cavara, Pavia, Italy. Fascicolo IX. (Nos. 201 to 226) of this collection of fungi contains specimens of *Cystopus candidus* and *C. Bliti:*

and several rusts including *Puccinia bullata* on *Conium*, a species that may be expected upon our celery at any time. Two root fungi are represented, namely: *Sclerotinia Libertiana*, Fl., and *Rhizoctonia violacea*, Tul. Only one species bears the name of the publishers—*Septoria Chrysanthemi*, Cavara, on *Chrys. Japonicum*. The specimens are accompanied by a bibliography, synonomy, engraving giving various details and copious notes. B. D. H.

Economic Fungi.—By A. B. Seymour and F. S. Earle. Fascicles vi.–viii. (Nos. 251–400) are devoted to parasites on weeds, and are "auxiliary to the experiment station exhibit of weeds at the Columbian Exposition at Chicago, with the coöperation of Byron D. Halsted," etc. The 150 species of fungi represent in their hosts 36 families of plants.

The order most largely represented is naturally the Compositæ, as it is the great weed family, but some others, as the Cruciferæ, Polygonaceæ and Gramineæ are not far behind. There are 101 species of hosts. Some species of fungi are represented upon two or more hosts, as *Cystopus candidus*, upon three crucifers; *Peronospora Halstedii*, upon four composites; *Coleosporium Ipomœæ*, upon three *Ipomœas*, and *Puccinia Polygoni-amphibii*, upon three smartweeds. Eleven new species are distributed (published elsewhere in the BULLETIN). One of these found upon two related hosts has been given a hyphen-word for the genera of the hosts, namely, *Cercospora Arcti-Ambrosiæ*, Hals.

One of the points of special interest is the considerable number of seedling hosts. Fungi are very likely most effective in checking weeds when the attack is early. The seed-leaves are often the first organ to be attacked, and some specimens illustrate this important point.

The collection is neatly mounted and substantially bound, and the editors should feel proud of their superior work. N. L. B.

International Botanical Congress. The following notice is issued by Prof. J. C. Arthur, chairman of a committee recently appointed by Prof. C. E. Bessey, Vice-President of the Section of Botany, A. A. A. S.

An International Botanical Congress will be held at Madison, Wis., U. S. A., beginning August 23, 1893, and continuing three or more days. All botanists are eligible to membership, and are

earnestly requested to attend the sessions, so far as possible. A membership fee of two dollars will be required.

The purpose of the Congress is the presentation and discussion of botanical questions of general interest relating to the advancement of the science. It is expected that the International Standing Committee on Nomenclature, appointed last year at the Genoa Congress, will present its first report at this time. Papers embodying research will not be received, but such papers, whether by American or foreign botanists, may be presented before the Botanical Section or the Botanical Club of the American Association for the Advancement of Science, which holds its annual meeting preceding that of the Congress (August 17 to 24).

Reduced rates of travel by steamship or railway cannot be provided by the Congress, but special rates can be obtained for the World's Columbian Exposition at Chicago. Madison is reached by several lines of railway from Chicago, and is distant only about four hours.

It is hoped that societies will send delegates to the Congress. It is requested that all persons intending to be present notify the chairman of the committee of arrangements at as early a date as possible.

Another circular giving further information and also a program of the sessions will be issued in July.

Committee {
J. C. ARTHUR, LaFayette, Ind.
L. H. BAILEY, Ithaca, N. Y.
N. L. BRITTON, New York, N. Y.
D. H. CAMPBELL, Menlo Park, Cal.
J. M. COULTER, Lake Forest, Ill.
F. V. COVILLE, Washington, D. C.
B. T. GALLOWAY, Washington, D. C.
CONWAY MACMILLAN, Minneapolis, Minn.
B. L. ROBINSON, Cambridge, Mass.
L. M. UNDERWOOD, Greencastle, Ind.
}

Index to Recent Literature Relating to American Botany.

Albert Kellogg (Zoë, iv. 1), with portrait.

Alien Plants in California. W. L. Jepson (Erythea, i. 140).

Amorpha fruticosa—The Range of. John M. Holzinger (Erythea, i. 131).

Ampelopsis quinquefolia—Notes on a Variety of. E. B. Knerr. (Bot. Gaz. xviii. 70, 71).

Description of a new variety, var. *vitacea*, the form of the Virginia creeper which does not cling to supports.

Analytical Keys to the Genera and Species of the Fresh Water Algæ and the Desmidiæ of the United States. Alfred C. Stokes (8 vo. pp. 116, one plate; Portland, Conn., 1893).

Dr. Stokes is an adept in the compiling of artificial keys, as we have had occasion to note in examining his publications in the Journal of the Trenton Natural History Society. That such keys are important time-saving devices must be apparent to every one, and when constructed with the accuracy of Dr. Stokes they become important factors in the rapid determination of genera and species. The only danger in their use lies in the fact that they cannot, as a rule, cover quite all the variations which some species exhibit. The present work is based on the writings of the late Dr. Francis Wolle. N. L. B.

A New Fashion in Writing Plant Names. Edward L. Greene (Erythea, i. 138).

A discussion of the decapitalization of specific names and the omission of the comma between the name and the author cited.

Anthracnose of Fruit—A New. G. F. Atkinson (Cornell Exp. Station Bul. 49).

Professor Atkinson figures and describes a new twig disease under the name of *Glœosporium cingulatum*. The methods of separating the fungus and making pure cultures are fully detailed. In the same bulletin may be found interesting notes upon the *Cercospora* of celery blight. B. D. H.

Black Walnut—The. J. T. Rothrock (Forest Leaves, iv. 38). With illustrations of *Juglans nigra*.

Botanical Writings of Edward L. Greene—The. Katharine Brandegee (Zoë, iv. 63).

Bromelia Argentina. J. G. Baker (Hooker's Icon. Pl. xxiii. Pl. 2258). A new species from the Argentine Republic.

Bromelia fastuosa. W. Watson (Gard. and For. vii. 224, illustrated).

Californian Cryptogams—Two. Marshall A. Howe (Erythea, i. 112).

Fimbriaria nudata is described as new, and an illustration of a peculiar form of *Polypodium Californicum* is given.

Carduus edulis—Habitat of. Edward L. Greene (Erythea, i. 143).

Check-List of the Plants of Gray's Manual. Compiled by John A. Allen (Cambridge, 1893).

This little pamphlet is a list of the 3,781 species contained in the last edition of Gray's Manual with addition of 140 species, either new, introduced or recently reported to be within its limits.

Colorado Plants—Notes on Some. Alice Eastwood (Zoë, iv. 2). *Phacelia splendens* and *Pentstemon Moffatii* are described as new.

Contributions to Western Botany. M. E. Jones (Zoë, iv. 22, with one plate).

Notes on some species of *Astragalus*, of which *A. anisus*, *A. Wetherilli*, *A. cicadæ*, *A. Preussii*, var. *latus* and var. *sulcatus*, *A. pictus*, var. *angustus*, and *A. patens* are described as new. Notes on *Neillia*, *Coloptera*, *Cymopterus*, *Zauschneria* and *Dodecatheon* are given. *Eremocrinum* is a new genus in the Liliaceæ, with one species, *E. albomarginatum*.

Corrections in Nomenclature—I., II. Edward L. Greene (Erythea. i. 114, 136).

The first article deals with the Australian genus *Piptomeris*, Turcz., to which the name of *Jacksonia* was inadmissibly applied. The second includes notes on the genus *Uropappus*, on *Malacothrix parviflora* and *Micrampeles Rusbyi*, the latter a correction of *M. macrocarpa*, Britton.

Enumeration of the Lichens found in New Bedford, Massachusetts, and its Vicinity from 1862 to 1892, by Henry Willey. (Printed for the author. New Bedford, Massachusetts. E. Anthony & Sons. 1892.)

This pamphlet of thirty-nine pages is taken up with a great deal of anticipation as a last word from America's veteran lichenologist, and the anticipation is more than realized on a careful perusal of the list. The author states in his preface that such lists

are not usually of much importance, but he has produced a list that will certainly remain classic and of great stimulus to future investigators. A brief description of the region explored is found with brief notes upon the floral and geological characteristics especially bearing upon the question of lichen habitat. The author indulges in a few remarks of regret regarding the acceptance of the "Schwendener theory" by "American professors," charging them with a lack of acquaintanceship with the anti-Schwendener lichenological writings, but, as it is remarked, "the last words have not been said upon this question," so perhaps it would be best not to pursue a controversy now a quarter of a century old. The author's parting instructions no doubt contain their atom of truth which we deem better not to have been expressed in such a place.

Fifty-six genera and 369 species are enumerated; following, in the main, the classification of the Genera Lichenum; of this number 39 species were new when discovered "by the author." A few further new species are noted:

Biatora Papillariæ and *B. Cladoniscum*, both parasitic upon *Cladonia Papillaria*: *B. terrena*, *B. rubido-fusca*, *Opegrapha cinerascens*, *Calicium pallidellum* and *Coniocybe gracilescens*.

It is to be hoped that the list before us will be an incentive to further work in this field of Cryptogamic botany. In closing this brief review we express our regrets that the author's failing eyesight shall deprive us of further results of his long continued and critical work. S. E. J.

Enumeration des Hepatiques Connues jusqu' ici aux Antilles Francaises. E. Bescherelle (Journ. de Bot. vii. pp. 174, 183).

One hundred and forty-eight species are recorded.

Flowers and Insects—X. Charles Robertson (Bot. Gaz. xviii. 47–54).

Notes on the insects observed visiting *Steironema lanceolatum*, *S. longifolium*, *Frasera Carolinensis*, *Ellisia Nyctelea*, *Comandra umbellata*, *Spiranthes gracilis*, *Orchis spectabilis* and *Habenaria leucophæa*.

Fungi of Blowing Rock, N. C. Geo. F. Atkinson and Hermann Schrenk (Journ. Elisha Mitchell, Sci. Soc. ix. 95–107).

Two hundred and fifty-four species are enumerated.

Fungus from the Coal Measures—A New. H. Herzer (Am. Geol. xi. 365, 366, Pl. ix.).

This is a poorly prepared description of a supposed fungus growth found under the bark of a *Sigillaria*, from the Zoar Limestone, Tuscarawas county, Ohio. A wretched plate accompanies the article, which we are told represents the new genus and species, *Incolaria securiformis.* Mention is also made of another species which is to be described in a forthcoming paper. We trust that both the plate and text of the latter will prove to be executed with reasonable care, as it is by reason of such as are now before us that doubt and discredit are thrown upon many valid and important discoveries. A. H.

Galinsoga parviflora—Zur Geschichte der Einwanderung von. Fr. Buchenau (Abhand. Nat. Ver. Bremen, xii. 551).

Generic Nomenclature. H. Baillon (Erythea, i. 116).

Grape—The Frost or River Bank. L. H. Bailey (Am. Gard. xiv. 321). With illustration of *Vitis riparia* and notes on the types of several other species.

Influence of Anæsthetics on Plant Transpiration. Albert Schneider (Bot. Gaz. xviii. 56–69; one plate).

Is Polyporus carnivorous? O. F. Cook (Bot. Gaz. xviii. 76–78).

Mr. Cook expresses hesitation in accepting Prof. Conway MacMillan's conclusion that *Polyporus* digests animal matter.

Kakteen der Grand Mesa in West Colorado—Die. C. A. Purpus (Monats. Kakteenk. iii. 49).

Kansas Trees—A Preliminary Report upon the Variety and Distribution of. S. C. Mason (Pamph. pp. 16; reprinted from the 8th Bien. Rep. Kansas State Board Agric. 259–274, 1891–92).

An account of the geographical and altitudinal distribution of Kansas trees, with notes on the species.

Leaf Variation—Its Extent and Significance. Mrs. W. A. Kellerman (Journ. Cinn. Soc. Nat. Hist. xvi. 49, with one plate).

Lichens of Ohio. E. E. Bogue (Journ. Cinn. Soc. Nat. Hist. xvi. 37).

One hundred and sixty-six species are listed.

Mosses of Mt. Desert Island. Theo. G. White (Bull. Gray Mem. Bot. Chap. Agaz. Ass. i. 2).

Mycology—Report by Dr. James E. Humphrey. (Mass. State Agric. Exp. Sta. 1892).

With five plates illustrating *Sclerotinia Libertiana, Erysiphe Cichoraceærum, Cladosporium cucumerinum* and *Plowrightia morbosa.*

Myxomycetes of the Miami Valley—II. A. P. Morgan (Journ. Cinn. Soc. Nat. Hist., xvi. 13, illustrated).

Forty-three species are enumerated. The new species described are *Hemiarcyria plumosa, H. ablata, H. funalis* and *Oligonema fulvum.* One new genus with one species, *Calonema aureum,* is also described.

Nanomitrium, Lindb.—Sur le genre. H. Philibert (Revue Bryol. xx. 49, 1893).

A very interesting comparison of *N. tenerum* with our three species confirms the specific rank of all, and especially of *N. megalosporum* (Aust.), which Lindberg had referred to it as a synonym. In sending specimens to M. Philibert, I called his attention to the fact that the spore-measurements of *N. megalosporum* are double the size of those given by Limpricht for *N. tenerum,* but having poor specimens of the latter, I could not make the complete series of comparisons which he has made. The descriptions will be found very complete, and include *N. æquinoctiale,* Spruce. E. G. B.

New or Little Known Plants Collected on Mount Orizaba in the Summer of 1891. Henry E. Seaton (Proc. Amer. Acad. xxviii. 116, reprint).

The new species are *Drymaria filiformis, Astragalus Orizabæ, Desmodium subsessile, Phaseolus Esperanzæ, Eryngium Seatoni, Arracacia nudicaulis, Viguiera pedunculata, Encelia stricta, Calea multiradiata, Tagetes linifolia, Euphorbia ramosa, Muhlenbergia Seatoni* and *Festuca rubra,* var. *Schlechtendahlii.*

New Plants of the Pacific Coast—I. Thomas Howell (Erythea, i. 109).

Species of *Thermopsis, Lupinus, Trifolium* and *Astragalus* are described as new.

Note sur une Cyperacee entophile. G. de Lagerheim (Journ. de Bot. vii. 181). *Dichromena ciliata*, Vahl, is the species noted.

Notes on the Flora of Texas. L. H. Pammel (Proc. Iowa Acad. Sci. 1892, 62–76). Enumeration of 291 species, with localities.

Notes on the Pollination of Cucurbits. L. H. Pammel (Proc. Iowa Acad. Sci. 1892, 79).

Notes on West American Umbelliferæ—III. John M. Coulter and J. N. Rose (Bot. Gaz. xviii. 54–56).

An account of some of Capt. J. Donnell-Smith's Guatemala plants; *Arracacia Luxeana* is a new species and *Eniantiophylla* a new genus of one species, *E. Heydeana*

Notes on North American Coniferæ—II. J. G. Lemmon (Erythea, i. 134). Notes on *Pinus Engelmanni*, Carr. and its synonymy.

Novitates Occidentales—III. Edward L. Greene (Erythea, i. 125). *Isopyrum occidentale*, var. *coloratum*, *Ranunculus Californicus*, var. *crassifolius*, *Lupinus eminens*, *L. tricolor*, *L. propinquus*, *Helianthella castanea* and *Phacelia imbricata* are the new species described.

Œdema of the Tomato. G. F. Atkinson (Cornell Univ. Ag. Exp. Sta. Bull. 53).

This is a swelling of portions of the tomato plant, due to excess of water and is a favored by: 1. Insufficient light. 2. Excess of soil water. 3. Soil temperature too near that of the air. The long nights, short days and cloudy weather of winter induce the œdema, especially if the soil is kept wet and of nearly the same temperature as the air above. Artificial œdema was produced in cut stems when water was forced into them through a hydrant hose. This process, and the microscopic structure of the abnormal cushions of œdematic plants are well illustrated in eight full page plates. The lack of light, excess of moisture and deficient soil temperature develop a weakened condition in the plant that may predispose it to attacks from fungi. The unnatural enlargement of the cells is a manifest weakness, or in the words of the investigator, "plants can grow themselves to death."

B. D. H.

Ohio Erysipheæ—The. A. D. Selby (Bull. No. 3 (Tech. Series) Ohio Exp. Station).

Professor Selby monographs the powdery mildews of Ohio, treating of twenty-four species, one of which *Uncinula Columbiana*, upon *Scutellaria lateriflora* is new and is illustrated in a plate. One associates our anniversary year with the name. B. D. H.

Orthotrichum Sturmii and O. rupestre.—Notes on. P. Culmann (Rev. Bryol. xx. 58, 1893).

Two new varieties are described from European specimens. *O. Sturmii*, var. *reticulatum* is based on the teeth being reticulated, not papillose; and *rupestre* var. *lamelliferum* on the presence of a preperistome, composed of basal lamellæ as in *O. cupulatum*. These lamellæ are papillose and composed of two or three joints reaching .02–.038 mm. above the annulus. They were also noted in *O. Sturmii*, though smooth. E. G. B.

Passiflora Jenmani. Maxwell T. Masters (Hooker's Icon. Pl. xxiii. Pl. 2270).

A new species of British Guiana.

Phænological Notes for 1892. L. H. Pammel (Proc. Iowa Acad. Sci. 1892, 46–61).

Tabulation of a very large number of observations on the earliest appearance of leaves and flowers.

Plants Injurious to Stock—Some. Thomas A. Williams (South Dakota Agric. Coll. Exp. Sta. Bull. No. 33).

Illustrations are given of *Astragalus mollissimus, Oxytropis Lamberti, Crotalaria sagittalis*, etc.

Quebracho. E. L. Baker (Hardwood, iii. June 10, 1893).

Relation of Frost to certain Plants. L. H. Pammel (Proc. Iowa Acad. Sci. 1892, 77–79).

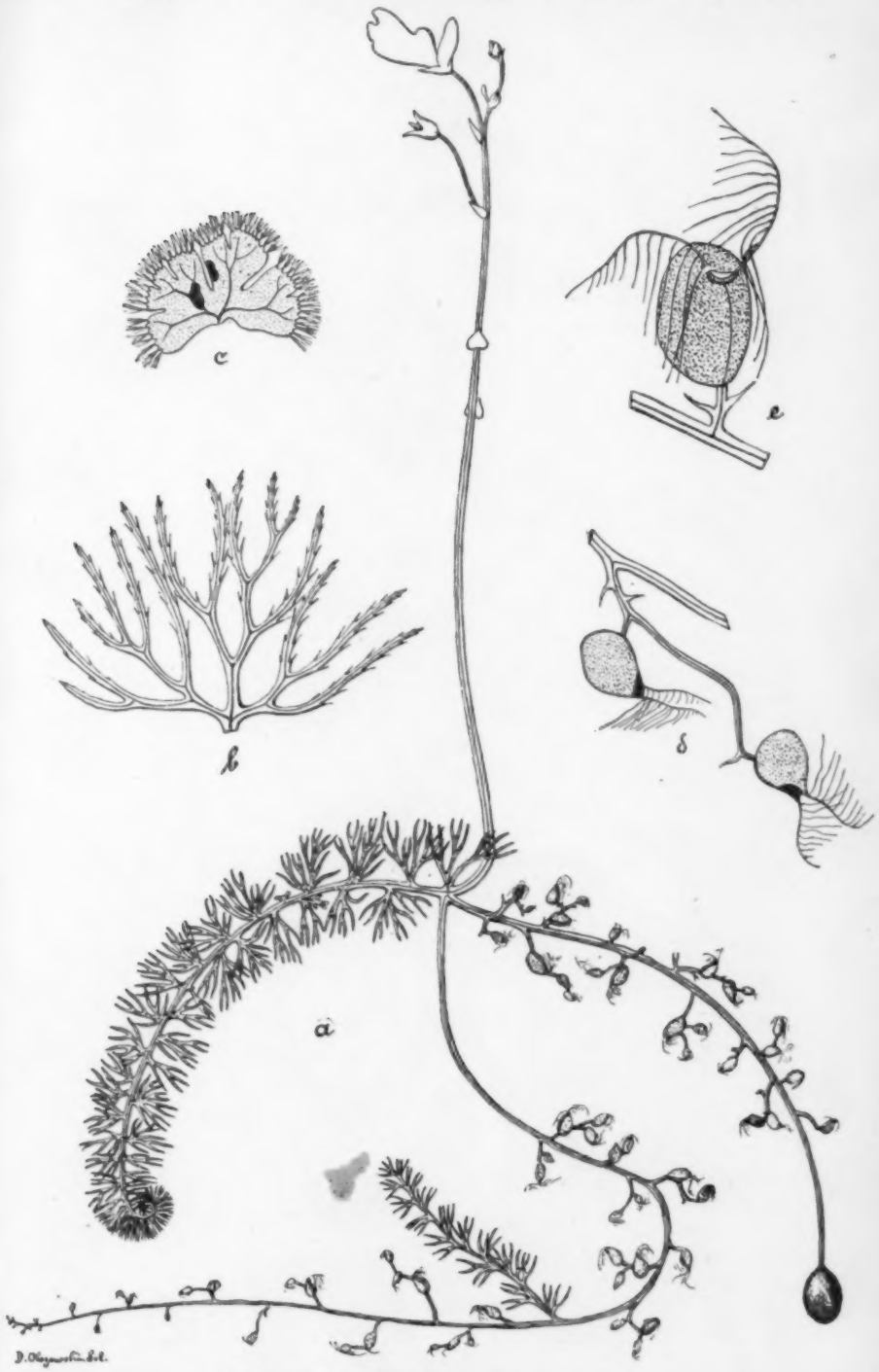
Ramona—A second Species of the Genus. Edward L. Greene (Erythea, i. 144).

PYROLA OXYPETALA, AUSTIN.

SAGITTARIA CUNEATA, SHELDON.

F. Muller.

HARTWRIGHTIA FLORIDANA, A. GRAY.



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